

## 1. BACKGROUND OF THE INVENTION

### A. Technical Field of the Invention

The present invention has been developed for free transfer between numbers in order to identify particular service providers or nations for both wire or wireless communication and is applicable to all wire/wireless communication.

### B. Prior Art

Current number transfer between service providers requires enormous cost and has a great number of complicated problems in view of inter-network inter-working and inter-service inter-working, etc. That is, as differentiation between nations or service providers become ambiguous, unification has become impossible according to concerned interests in various aspects including regulations, arbitration, providing scheme, intention determination, etc. Further, even when it is possible to achieve the number transfer in some aspects, it may be still very difficult to achieve the unification in other communication aspects for the number transfer.

## C. PROBLEMS OF THE PRIOR ART & OBJECTS OF THE INVENTION

### - PROBLEMS OF THE PRIOR ART

Currently, it is difficult to obtain an optimum solution, because each country has problems of enormous cost and complicated technical, economic, and social problems. Therefore, it is thought to be unnecessary to deal with that problem in detail.

### - OBJECTS OF THE INVENTION

Due to introduction of competition system and closure of business fields in the communication business, opening of phone number resources is now in progress mainly by developed countries. As a result, guarantee of number transfer between service providers has now become a basic condition for a service provider to newly enter the communication business. Also, it is necessary for existing service providers to establish a proper counter plan.

An object of the present invention is to provide an idea which can solve the problem of number transfer between service providers with small cost in a simple and easy manner in view of a communication service provider.

## 2. DETAILED DESCRIPTION OF THE INVENTION

### A. CONSTRUCTION OF THE INVENTION

According to the construction of the present invention, first, a phone number is inserted and stored in the NAM. For example, data stored with a number of 011-1234-5678 is stored with a number of 05-011-1234-5678 instead of the former number. The two added two preceding digits are subjected to number masking, so that the number of  $011+5=016-1234-5678$  is displayed on a display. The number of 011-1234-5678 without the two masked digits is used for management, regulation, and billing by the service provider.

First, in the case of a mobile terminal having a guaranteed number transfer, the number stored in the NAM has a shape of 00-000-0000-0000 with the masked digits added.

Second, the present invention provides a number transfer algorithm which can control the user number as described above either on a screen or when it is transmitted to a base station. This algorithm is briefly classified into two types, in which the two masked

digits are recognized and then sent to a user's display, and in which the digits are sent together with the data transmitted between a base station and a service provider.

Third, when a user sends a number of a counter part in the form of 000-0000-0000, arrival of the three preceding digits causes connection to a module for checking if there is any change in the service provider of the subscriber, which then re-transmits any change to the called service provider.

## B. OPERATION OF THE INVENTION

It is a premise of the present invention that a service provider identification number must necessarily follow a corresponding service provider when a new subscriber joins a service. That is, the subscriber number is appointed in the same manner as the current manner. Further, by adding two masking digits 00 to the currently used service provider number, a new service provider number of 00-011-1234-5678 is obtained.

Hereinafter, the operation will be described by way of an example. If a subscriber with a number of 011-1234-5678 wants to change the service provider to the 016 provider while maintaining the current phone number, a number of 15-016-1234-5678 is stored in the NAM of the terminal. That is, although the user can continue to use the number "011-1234-5678," the service provider internally manages the number "00-011-1234-5678" or the number "15-016-1234-5678" as the NAM data. When a user calls a mobile phone or a wire telephone, the user's own number is transmitted as "15-016-1234-5678" while displayed on a screen as the number "011-1234-5678" obtained through calculation eliminating the two preceding digits. When another user calls to as the number "011-1234-5678," the number "00-011-1234-5678" is transmitted to the 011 provider. Then, the 011 provider the number to the module for checking if there is any

number transfer of the corresponding subscriber between the service providers. First, the number is first transmitted in the existing subscriber form of 00-\*\*\*\*, and it is then unconditionally sent to the check module. When the transfer list does not include the number transfer, the number is directly connected. If the transferred number "00-011-1234-5678" is found in the transfer list, the data is re-transmitted. Thereafter, the service network transmits the number "15-016-1234-5678" again to the 016 provider. Then, the corresponding terminal is connected to a terminal identified by the number "016-1234-5678," and the connected terminal determines the masked digits of the transmitter and displays again the number "011-1234-5678." When the terminal has a number identified by "15-\*\*\*\*", that is transferred data, instead of the number "00-\*\*\*\*," it is determined that the data has been already checked by another party and the terminal is directly connected to the corresponding subscriber.

Actually, because it is not true that most of the subscribers do the number transfer, a small amount of fee may be charged for the user who has done the number transfer. Also, determination of charge by each service provider can make it not a difficult problem to determine if there is any provider change after transmission to the original subscriber. Then, it is possible to solve the problems of astronomical expense in order to achieve service unification between networks which require replacement of software and hardware, solve the problems due to the unification of standards between the service providers, and simplify regulation, arbitration, charge, management, etc. Therefore, the present invention can solve problems of the number transfer between the service provider in a very easy and simple manner.

### C. EFFECTS OF THE INVENTION